

## Lesson Summary

This lesson covered two of Machine Learning's fundamental approaches: **supervised** and **unsupervised** learning.

First, we learned about **supervised learning**. Specifically, we learned:

- More about *classification* and *regression*, two of the most representative supervised learning tasks
- Some of the major *algorithms* involved in supervised learning, as well as how to evaluate and compare their performance
- How to use the Designer in Azure Machine Learning Studio to build pipelines that train and compare the performance of both binary and multi-class classifiers.
- How to use *automated machine learning* to automate the training and selection of classifiers and regressors, and how to use the Designer in Azure Machine Learning Studio to create automated Machine Learning experiments

Next, the lesson focused on **unsupervised learning**, including:

- Its most representative learning task, *clustering*
- How unsupervised learning can address challenges like lack of labeled data, the curse of dimensionality, overfitting, feature engineering, and outliers
- An introduction to *representation learning*
- How to train your first clustering model in Azure Machine Learning Studio